

Application No.: 10/716346

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REMARKS

Claims 1-27 are in the case. Claims 1-20 are withdrawn. Claims 21-27 are under presently consideration in the case.

Claims 21 and 25 have been amended to more clearly define Applicants' invention.

All claims remain rejected under 35 USC § 102 and the judicially created doctrine of double patenting.

No new matter has been added.

Claim Rejections – 35 USC § 102

Claims 21-24 and 27 are rejected under 35 USC § 102(b) as being anticipated by Guo et al (Adv. Mat., 1998 10(9): 701, hereinafter "Guo").

Guo teaches the TEM imaging of DNA on a carbon nanotube (CNT) substrate. Guo does not teach a dispersed CNT wrapped by DNA and do not teach the use of single walled nanotubes (SWNT).

The Examiner is of the opinion that Guo:

- a) anticipates Claim 21 by teaching a nucleic acids associated with a CNT's by non-covalent means;
- b) anticipates claim 22 in that the nucleic acid is DNA
- c) anticipates claim 23 in that the DNA is isolated from nature
- d) anticipates claim 24 in that the DNA is between 10 and 1000 bases
- e) anticipates 27 in that the DNA is metallized.

Applicants respectfully traverse.

It is axiomatic that for a rejection to be valid under 35 USC § 102(b) each and every element of the claimed invention must be present in the cited reference. The claims have been amended to recite the limitation that the carbon nanotube - nucleic acid complex is dispersed and that it is limited to SWNT. Support for the limitation of a dispersed CNT is found on page 7, beginning at line 23 of the specification and in the examples. Support for the limitation of the use of SWNT is found throughout the specification and particularly in the examples.

Guo teaches the use of a mat of CNT as a substrate for the TEM imaging of DNA. The CNT are not dispersed and are clearly mutliwalled as seen in the TEM figure (Figure 1 for example). Thus each and every element of the claimed invention is not contained in the cited reference and therefore Guo does not anticipate the claims as amended.

Claims 21-27 are rejected under 35 USC § 102(b) as being anticipated by Massey et al, in US 5866434, hereinafter "'434".

'434 teaches the coupling of biotinylated DNA molecules to a CNT functionalized with avidin. The CNT are used as supports in bioassays.

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The examiner is of the opinion that '434 anticipates the limitation of a nucleic acid molecule non-covalently bound to a CNT by virtue of the teaching of a biotinylated DNA bound to an avidin functionalized CNT.

Applicants respectfully traverse.

The standard for a valid rejection under 35 USC § 102(b) has been given above. The claims have been amended to recite the limitation that the carbon nanotube - nucleic acid complex is dispersed and that it is limited to SWNT. '434 does not teach dispersed CNT. Additionally, Claim 25 has been amended to include the limitation that the CNT lacks functionalization with a member of binding pair. The teaching of '434 with respect to association of the DNA with the CNT is limited to situations where the CNT is functionalized with a member of a binding pair (Column 40, lines 41-50).

Applicants submit that '434 does not contain each and every element of the invention as now amended and thus does not anticipate the invention.

Double Patenting

Claims 21-23 and 25-27 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting over claims 14 and 19 USSN 10/716,347 for reasons of record. A timely filed terminal disclaimer is sufficient to overcome this rejection.

The examiner submits that the subject matter of the claims from the present and cited application differ only in that the CNT-nucleic acid complex differ only in the method of making. Applicants traverse.

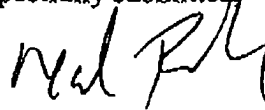
Claim 14 of USSN 10/716,347 is drawn to a population of complexes whereas the claims of the instant application encompass a single complex, which make the claims patentably distinct. Additionally the complex of Claim 14 of USSN 10/716,347 is a product by process allowing for the possibility that the process has imparted unique features to the product. The foregoing arguments notwithstanding Applicants recognize the value to use of the terminal disclaimer to resolve this rejection.

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In view of the foregoing arguments Applicants respectfully request reconsideration of the claims as amended and removal of all rejections.

Respectfully submitted,



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